

Algebra 1 Sub Plans Week, High School

Week-long sub plans: five days of print and go work for grades 9 to 12, planned Monday to Friday.

PREVIEW

What is included

- Sub binder: notes, the filled-in week plan, a blank schedule, class list, Monday opener (11 pages)
- Algebra 1 sets for five days (15 pages)
- Calm puzzles and reset sheets (10 pages)
- Algebra 1 team tasks (9 pages)
- Algebra 1 games (10 pages)
- Answer keys (6 pages)

How it works

1. Open the week plan. Every set already has its day and page number.
2. Each day: one Algebra 1 set per period (a lesson with worked examples, practice and a challenge), a calm puzzle, a team task and an optional game for the last 15 minutes.
3. Every set stands alone: swap sets between days, or use one with another class when it fits.
4. No prep, no tech: print and go. The sub needs no subject knowledge. Every answer is in the key.
5. Print in color or ink-saver black and white, US Letter or A4.

What this preview shows: the week at a glance, the filled-in week plan, the note to the substitute, the Monday opener, and all of Day 1 (the Algebra 1 set, the calm block, the team task and the game), one answer-key page and one ink-saver page. Every product page is watermarked. The full kit has 62 pages.



Every Algebra 1 set of the week, with its page and what it reviews. The day's set runs in every period you teach; any set works on any day.

MONDAY (DAY 1)

Opener	Meet Your Sub Fifteen minutes at the top of every period on Monday: the sub sheet, three questions, the class agreement and the voice levels.	p. 10 · 15 min
Algebra 1 set 1	Expressions, Properties and Order of Operations Reviews: order of operations, evaluating and simplifying expressions, the distributive property, naming properties, translating phrases into expressions.	p. 13 · 50 min
Calm puzzle	Word Search and Reset Sheet A quiet subject word search and a two-minute reset sheet for a loud day, a long wait or anyone who finishes early.	p. 16 · 20 min
Team task	The Ten Day Contract Groups of four rank twelve pay offers for a ten day job by gut, then by algebra, and score the gap to the true totals.	p. 18 · 40 min
Game (optional)	Whiteboard Quiz Game Optional fun to end the class.	p. 19 · 15 min

TUESDAY (DAY 2)

Algebra 1 set 2	Functions and Their Graphs Reviews: function notation, the vertical line test, domain and range, linear rules from tables, reading a distance over time graph, rate of change.	p. 21 · 50 min
Calm puzzle	Sudoku and Grounding Sheet A hard sudoku with exactly one answer and a 5-4-3-2-1 grounding sheet for anyone who needs to come back into the room.	p. 24 · 20 min
Team task	The Winter Carnival Budget Groups of four evaluate cost and hours functions for eight carnival attractions and build the most fun plan inside two limits.	p. 26 · 40 min
Game (optional)	Paper Password Optional fun to end the class.	p. 28 · 15 min

WEDNESDAY (DAY 3)

Algebra 1 set 3	Quadratics Reviews: factoring trinomials and differences of squares, solving by factoring, vertex and axis of symmetry, the quadratic formula, the discriminant.	p. 30 · 50 min
Calm puzzle	Secret Codes and Control Sheet Two coded sayings to crack in silence and a sheet that sorts what you can and cannot control this week.	p. 33 · 20 min
Team task	Crack the Machine Groups of four build two secret function machines, then crack a neighboring group's machines in as few tests as they can.	p. 35 · 40 min
Game (optional)	Class Feud Optional fun to end the class.	p. 37 · 15 min

THURSDAY (DAY 4)

Algebra 1 set 4	Exponential Growth, Decay and Sequences Reviews: arithmetic and geometric sequences, nth term rules, exponential growth and decay models, percent to growth factor, linear versus exponential.	p. 39 · 50 min
Calm puzzle	Maze and Brain Dump A long maze with exactly one true path and a brain dump sheet that turns a crowded head into one next step.	p. 42 · 20 min
Team task	The Data Desk Four editors, each holding one data set, check eight statistical headlines and build a front page that is true and fits.	p. 44 · 40 min
Game (optional)	Classroom Millionaire Optional fun to end the class.	p. 46 · 15 min

FRIDAY (DAY 5)

Algebra 1 set 5	Data and Statistics Reviews: mean, median, mode and range, finding a missing value, outliers, percents from a two way table, correlation, predicting with a line of best fit.	p. 48 · 50 min
Calm puzzle	Word Ladders and Three Good Things Four five-letter word ladders, three scrambled words and a three good things sheet to close out the week.	p. 51 · 20 min
Team task	The Gift Fund Debate Groups of four check compound growth, decay and a percent in a shared evidence bank, then debate the school gift two against two.	p. 53 · 40 min
Game (optional)	Mystery Box Optional fun to end the class.	p. 55 · 15 min

How the sets work

- One set per day covers every period you teach: Monday's set runs in every Monday class.
- Every set stands alone. Swap sets between days, or use one with another class when it fits.
- Each set opens with a line that says what it reviews, so you can match it to what your class covered.
- The calm puzzle fits any gap, the team task fills a block period, and the game is optional fun for the last 15 minutes.
- No prep, no tech. Every answer is in the keys at the back, so the sub needs no subject knowledge.



This Week's Plan

You teach one subject to several classes, so every period you teach runs this same plan, first period to last: Monday's column in every Monday period, Tuesday's in every Tuesday period. Planning, lunch and duty periods: nothing to do. List your periods and classes on the blank schedule on the next page. This order is a sample: every set stands alone, so swap any set into any slot or any day.

WHEN	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
First 15 minutes: attendance, voice level, then	Meet Your Sub p. 10 · 15 min	Go over yesterday's answers Read them out from the key at the back; students mark their own (10 min)	Go over yesterday's answers Read them out from the key at the back; students mark their own (10 min)	Go over yesterday's answers Read them out from the key at the back; students mark their own (10 min)	Go over yesterday's answers Read them out from the key at the back; students mark their own (10 min)
Rest of the period: the day's set (one copy per student)	Algebra 1 1 Expressions, Properties and Order of Operations p. 13 · 50 min	Algebra 1 2 Functions and Their Graphs p. 21 · 50 min	Algebra 1 3 Quadratics p. 30 · 50 min	Algebra 1 4 Exponential Growth, Decay and Sequences p. 39 · 50 min	Algebra 1 5 Data and Statistics p. 48 · 50 min
If a class finishes early or gets loud	Word Search and Reset Sheet p. 16 · 20 min	Sudoku and Grounding Sheet p. 24 · 20 min	Secret Codes and Control Sheet p. 33 · 20 min	Maze and Brain Dump p. 42 · 20 min	Word Ladders and Three Good Things p. 51 · 20 min
Block period (90 minutes) only	The Ten Day Contract p. 18 · 40 min	The Winter Carnival Budget p. 26 · 40 min	Crack the Machine p. 35 · 40 min	The Data Desk p. 44 · 40 min	The Gift Fund Debate p. 53 · 40 min
Last 15 minutes (optional): a fun way to end the class, or for extra time	Whiteboard Quiz Game p. 19 · 15 min	Paper Password p. 28 · 15 min	Class Feud p. 37 · 15 min	Classroom Millionaire p. 46 · 15 min	Mystery Box p. 55 · 15 min

How this week works

- You are covering a teacher who teaches one subject to several classes. Each class comes to this room once a day, for one period.
- So every class gets the same set on the same day: Monday's set in every Monday period, Tuesday's set in every Tuesday period.
- One set per day covers all your classes. Copy that day's set once per student in the morning. Planning, lunch and duty periods: nothing to run.
- Each set fills one period (45 to 55 minutes); the challenge at the end stretches it to a 90-minute block.

How to use this plan

- Page numbers point to the first page of each set. Copy one per student.
- The calm block is always allowed: a period that runs short, a loud class, or anyone who finishes early.
- The game is optional: a fun way to end the class, or something for extra time.



Note to the Substitute

Grades 9 to 12 · five days · every set runs from the printout alone

Thank you for covering my classes this week

Everything you need is in this binder. The front pages (important information, weekly schedule, class list) are filled in for this week. After them come the work sets, one per day: **Algebra 1 1** is Monday's set, **Algebra 1 2** is Tuesday's, and so on to **Algebra 1 5** on Friday. Run the day's set in every period you teach that day. Each set is one period (45 to 55 minutes), stands alone, and has its own answer key at the back of the binder, so you never have to make anything up or know the subject. The first page of every set tells you what to say. Every set ends with a challenge, so it stretches to a 90-minute block when you need it.

After the subject sets come the shared blocks, one of each per day. The **calm block** is always allowed: for a period that runs short, a loud class, or anyone who finishes early. The **team task** fills a period on its own. The **game** is optional: a fun way to end the class, or something for extra time. Fifteen minutes, from the script.

Each day has

- One Algebra 1 set (one period, with a challenge to stretch it)
- A calm and quiet block: a puzzle page and a reset sheet
- A team task for groups of four
- A paper game from the script

If the class is loud

- Set a voice level with a number, 0 to 3, and use it all week (the Day 1 opener explains it).
- Switch to the calm block. Nobody needs to move.
- Every set has a challenge at the end, so fast finishers always have something.
- If a set is not working, stop it and use the calm block or the team task. Every set starts cold.

At the end of each day

Please fill in that day's line on the "How it went" page. It takes two minutes and I read every word.

Did this kit work well for your class? A quick review helps other teachers find it and earns you TpT credits. Thank you!



Meet Your Sub

Day 1 opener, 15 minutes at the start of every period on Monday, before the set. Nothing to prepare.

Opener

Sub script (the same five minutes in every class)

1. **Before first period, fill in the introduction sheet** on the next page, once, for the whole day. Keep it short and honest. A high school class reads a sub in about ten seconds, so give them something real to read.
2. **Introduce yourself from the sheet** in two minutes. Then hold up the Ask the Sub list and take three questions from raised hands. Three, not ten. Say when you are done taking questions.
3. **Read the class agreement out loud** and ask this period to add one line of their own. Write that line on the board for the period. The line they wrote is the one they keep.
4. **Set the voice level with a number** from 0 to 3, using the box at the bottom of the sheet. Say which level today's set needs, and use the same numbers in every class all week.
5. **Start the set** with one sentence: this is today's work, it has a challenge at the end, and the calm block is always allowed when you are finished.

If the room is loud

- Skip the questions. Keep the agreement and the voice level, and say the number out loud.
- Start the set sooner. Work on the desk beats a speech about behavior every time.
- Name the level again after four minutes. A number is easier to follow than a lecture.

If a period runs ten minutes short

- Run Common Ground in groups of four. Six minutes of work, four minutes of reading out.
- Or hand out the reset sheet from the calm block and let the room go quiet early.
- Or have each student write one question they would ask the teacher when they get back.

Monday checklist (before first period)

- ☐ Read the Important Information page: office extension, exits, the nurse, the teacher next door.
- ☐ Check the class list for allergies, medical needs, early releases and students who carry a pass.
- ☐ Find today's set on the weekly schedule and count copies for every period, plus five spares.
- ☐ Fill in the About Your Sub sheet once and post it where the back row can read it.
- ☐ Write the voice levels 0 to 3 on the board and leave them there all week.
- ☐ Keep the answer keys inside the binder, not face up on the desk.



Algebra 1 Set 1: Expressions, Properties and Order of Operations

Algebra 1 • Day 1

Read the four worked examples and the rules, then do the quick check at the bottom of this page. Show every step.

This set reviews: order of operations, evaluating and simplifying expressions, the distributive property, naming properties, translating phrases into expressions

1 Order of operations

$4 + 3 \times (6 - 2)^2 \div 8$. Parentheses first: $6 - 2 = 4$. Then the exponent: $4^2 = 16$. Then multiply and divide from left to right: $3 \times 16 = 48$ and $48 \div 8 = 6$. Add last.

$$4 + 6 = 10$$

2 Evaluate an expression

$2x^2 - 3xy + y$ when $x = -3$ and $y = 2$. Put every value in parentheses before you do anything else: $2(-3)^2 - 3(-3)(2) + 2 = 2(9) + 18 + 2$.

$$18 + 18 + 2 = 38$$

3 Distribute, then combine

$4(2x - 3) - 2(x - 5)$. Multiply each number through its parentheses and carry its sign: $8x - 12 - 2x + 10$. Then combine the like terms: $8x - 2x$, and $-12 + 10$.

$$6x - 2$$

4 Translate a phrase

"Five less than three times a number n ." Three times n is $3n$. "Less than" flips the order: five less than $3n$ means start with $3n$ and take 5 away.

$$3n - 5$$

Remember

- Order of operations:** grouping symbols first, then exponents, then multiply and divide from left to right, then add and subtract from left to right. Multiplying does not always come before dividing: whichever is further left goes first.
- Evaluate with parentheses.** Substitute every value inside parentheses, so a negative number keeps its sign: if $x = -3$, then $x^2 = (-3)^2 = 9$, but $-x^2 = -9$.
- Like terms** have the same variable part. $5x$ and $-2x$ combine to $3x$, but $3x^2$ and $3x$ never combine.
- Distributive property:** $a(b + c) = ab + ac$. The number outside multiplies every term inside, sign included: $-2(x - 5) = -2x + 10$.
- Properties:** *commutative* changes the order ($a + b = b + a$), *associative* changes the grouping, *identity* adds 0 or multiplies by 1, and *inverse* gets back to 0 ($a + (-a) = 0$).

Quick check: name the property each statement shows

Commutative Property of Multiplication

Associative Property of Addition

Distributive Property

Additive Inverse Property

Multiplicative Identity Property

Commutative Property of Addition

1. $x \times 9 = 9 \times x$ _____

2. $(a + 4) + 6 = a + (4 + 6)$ _____

3. $5(x + 3) = 5x + 15$ _____

4. $12 + (-12) = 0$ _____



Algebra 1 Set 1: Practice

Sixteen problems in four blocks. Put the answer on the line and your work in the space beside it.

Algebra 1 • Day 1

A. Use the order of operations

1. $18 - 2 \times (3 + 4)$

2. $5^2 - 4 \times 3 + 6 \div 2$

3. $[20 - (2 + 3)^2] \div 5$

4. $48 \div 6 \times 2 - 3^2$

B. Evaluate each expression

1. $3x^2 - 5x + 2$, when $x = -2$

2. $(a + b)^2 - 2ab$, when $a = 4$
and $b = -1$

3. $(5m - 3)/(m + 1)$, when $m = 3$

4. $-x^2 + 4x$, when $x = -3$

C. Simplify

1. $5x^2 + 3x - 2x^2 + 8 - 7x$

2. $3(4a - 5) + 2a$

3. $-2(3y - 4) + 5(y + 1)$

4. $4(2m + n) - 3(m - 2n)$

D. Write an algebraic expression

1. The product of seven and a number n , decreased by four

2. Twice the sum of a number n and nine

3. The quotient of a number n and five, increased by three

4. Eight less than the square of a number n

Block C: leave the answer with the highest power first and no parentheses. Block D: use n for the number. Any equivalent expression is correct.

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Algebra 1 set 1, page 2 of 3



Algebra 1 Set 1: Word Problems and Challenge

Algebra 1 • Day 1

Six word problems. Write the expression first, simplify it if you can, then substitute the numbers. Three challenges follow.

- 1 A club sells t tickets at \$6 each and spends \$45 on decorations. Write an expression for its profit, then find the profit when $t = 32$.
- 2 A rectangle is $(3x + 2)$ cm long and $(x - 1)$ cm wide. Write its perimeter in simplest form, then find the perimeter when $x = 6$.
- 3 A streaming service charges \$12 a month plus \$3 for each movie rental. Write an expression for m months and r rentals, then find the cost of 6 months and 9 rentals.
- 4 The formula $F = (9/5)C + 32$ changes a Celsius temperature C into Fahrenheit. Find F when $C = 25$, and again when $C = -10$.
- 5 Three consecutive integers are n , $n + 1$ and $n + 2$. Write their sum in simplest form, then find the sum when $n = 14$.
- 6 Priya buys p notebooks at \$2.50 each and three more pens than notebooks at \$1.20 each. Write the total cost in simplest form, then find it when $p = 4$.

Challenge

- 1 Maya says $2 + 3 \times 4^2 = 80$. Find her mistake and give the correct value.
- 2 Simplify $3(2x^2 - x + 4) - 2(x^2 + 3x - 5)$, then evaluate your answer when $x = -2$. Check by putting $x = -2$ into the original too.
- 3 Place one pair of parentheses so that $8 + 4 \times 6 - 2 = 24$ is true. Then show the steps that prove it.



Calm Block, Day 1: Word Search

Find all 12 algebra words. Any direction, including backward and diagonal. Pencils only, voices at 0.

Calm • Day 1

R	P	C	T	B	T	B	V	H	T	W	O	R	G
E	S	H	O	B	H	S	V	D	P	B	W	Y	J
T	Q	F	N	D	Y	L	A	I	M	O	N	I	B
T	L	U	F	I	E	T	A	Q	H	G	E	C	A
A	U	M	A	Y	A	O	N	V	U	O	L	I	V
C	J	K	A	D	I	M	Y	A	U	I	E	H	B
S	Q	C	K	T	R	B	O	T	T	L	U	L	B
W	E	H	A	M	Q	A	L	D	Q	S	C	J	U
D	A	R	Z	I	L	I	T	O	R	Z	N	I	X
T	T	C	O	B	E	M	U	I	I	L	G	O	G
C	J	T	T	R	A	B	C	G	C	Q	A	A	C
S	M	G	X	P	O	L	Y	N	O	M	I	A	L
A	B	F	E	W	G	A	B	S	O	L	U	T	E
F	E	T	A	U	L	A	V	E	B	E	O	W	N

POLYNOMIAL

QUADRATIC

EVALUATE

BINOMIAL

CONSTANT

ABSOLUTE

OUTLIER

SCATTER

DOMAIN

GROWTH

RATIO

DECAY

Faster than reading every square

- Hunt the rare letters first. Only one word in the list has a Q in it, so every Q in the grid is worth a second look.
- Scan one row at a time for a word's first two letters, then check all eight directions from that square.
- Cross a word off the list the second you circle it, or you will search for it twice.



Calm Block, Day 1: Reset Sheet

For one person, at your own pace. Nobody collects this and nobody reads it but you.

Calm • Day 1

Two minutes, then back to it

This is not a mood test and it is not therapy. It is a short routine for the moments when your head is somewhere else and the work in front of you is going nowhere: slow the breath, put a name on the feeling, pick the next five minutes. Work down the page and stop at the bottom.

Step 1: make the breath out longer

Breathe in through your nose while you count to four, then out through your mouth while you count to six. The long breath out is the part that slows your heart rate down. Six rounds, then stop.

Check a box for each round so you are not counting in your head.

□ □ □ □ □ □

Step 2: name it

A feeling you can name gets smaller. Tired, annoyed, behind, worried, bored, flat, wired. One word is enough, and it does not have to be the right word.

Write yours on the first line below.

Name it in one word, then write the sentence your head keeps repeating

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What is actually true right now, in this room, that I could check in ten seconds

.....

.....

The next five minutes: what I will do the moment I put this sheet down

.....

.....

What usually helps me

- ☐ Water and a real breath of air
- ☐ Writing the thing down instead of holding it
- ☐ Two minutes of a puzzle or a doodle
- ☐ Starting the smallest piece of the work
- ☐ Standing up and stretching my shoulders
- ☐ Putting my phone face down in my bag
- ☐ Asking one person one question
- ☐ Deciding to deal with it after school

My own line

Something that works for you that is not on that list.

.....

.....

Right now I feel (circle one)

1 2 3 4 5 6 7 8 9 10

1 = settled, 10 = about to boil over. Check the same number again in ten minutes. Down by one is the whole point.



Team Task, Day 1: The Ten Day Contract

Groups of four. Voice level 2. No calculators and no phones. One sheet per group, one person writes, and no group rank goes down until all four agree.

Team • Day 1

The challenge

A company needs help for exactly **10 working days** and lets you choose how you are paid. The twelve offers below grow in different ways: flat, adding the same amount, doubling, squaring. **Your job:** rank them from **1 (most money in total)** to **12 (least)**.

Step 1: alone, in three minutes, fill in "My rank" by instinct. **Step 2:** split the offers, three each, work out every ten day total, check each other's, and agree on the group rank. Every rank from 1 to 12 is used once. The sub then reads out the true totals. The rule for the true order has no judgment calls: **total pay over the ten days, most first.**

OFFER	MY RANK	GROUP RANK	TEN DAY TOTAL	TRUE RANK	DIFFERENCE
A \$100 every day					
B \$1 on day 1, then double the day before, every day					
C 1 cent on day 1, then triple the day before, every day					
D \$5 times the day number squared (day 3 pays \$45)					
E \$50 on day 1, then \$12 more each day					
F \$18 times the day number (day 3 pays \$54)					
G \$250 a day for the first four days, then \$10 a day					
H A \$350 bonus on day 1, plus \$70 every day					
I \$200 on day 1, then \$20 less each day					
J \$2 on day 1, then double the day before, every day					
K \$640 on day 1, then half of the day before, every day					
L \$25 on day 1, then \$25 more each day					
Total difference (lower is better)					

Shortcuts and scoring

- **Changes by the same amount each day:** day 1 + day 10 = day 2 + day 9, so the total is $5 \times (\text{first} + \text{last})$.
- **Doubles each day:** the total is $2 \times \text{last day} - \text{first day}$.

Difference = group rank minus true rank, sign dropped, added over the twelve rows. Score your "My rank" column the same way.

- **0 to 6:** excellent: your group adds like a payroll office
- **7 to 14:** good
- **15 to 24:** fair
- **25 or more:** redo the totals together

Gut versus algebra

Which offer fooled your instinct the most, and what kind of growth was it?

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Challenge: offer C comes last over ten days. Would it still lose if the job ran twenty days? Give a reason without adding.

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Game, Day 1: Whiteboard Quiz Game

Sub script and questions. 15 minutes at the end of the period, or for extra time. Optional.

Game • Day 1

Set up (2 minutes)

1. Draw a 5 by 5 grid on the board, or tape up the board sheet. Write the five category names across the top and the values 100 to 500 down each column.
2. Teams of four to six. Team 1 picks a category and a value.
3. Read the question. The team gets 15 seconds and one answer. Right: they take the points and pick again.
Wrong: the next team may steal, then play moves on.
4. Cross the square off. Highest total when time is up wins.

Read this out

"One voice per team: pick a captain who says the final answer. Shouted answers do not count and the square is dead. Team 1, choose a category and a value."

Keep the running score in a corner of the board. If a team argues a call, the script wins and the game moves on. The bold answer is the one to accept, but take a clear equivalent too (negative 1 for -1, 40% for 40 percent).

Expressions

100 What is the value of $3 + 4$ times 5?

23

200 What is $2a + b$ when $a = 6$ and $b = 5$?

17

300 What is the coefficient of x in $3(2x + 5) + 4x$?

10

400 What is $(8 \text{ minus } 2)$ squared, divided by 4?

9

500 What is 5 times the square of x when $x = \text{negative } 2$?

20

Sequences

100 What is the next term of 5, 9, 13, 17?

21

200 What is the common ratio of 3, 6, 12, 24?

2

300 What is the 10th term of 2, 5, 8, 11?

29

400 A value of 200 grows 10 percent a year. What is it after 2 years?

242

500 What is the 6th term of 1, 3, 9, 27?

243

Functions

100 If $h(x) = 3x$ minus 5, what is $h(4)$?

7

200 If $f(x) = x$ squared + 1, what is $f(5)$?

26

300 For $f(x) = 4x + 2$, which x makes $f(x) = 30$?

7

400 If $f(x) = 5x$ on the domain 1, 2, 3, what is the largest value in the range?

15

500 What is the average rate of change of x squared from $x = 1$ to $x = 5$?

6

Statistics

100 What is the mean of 6, 9, 12 and 17?

11

200 What is the median of 10, 4, 8, 2, 6 and 12?

7

300 What is the range of 31, 18, 44, 25 and 29?

26

400 A line of best fit is $y = 2x + 5$. What does it predict at $x = 10$?

25

500 In a class, 12 of 30 students ride the bus. What percent is that?

40 percent

Quadratics

100 What is the positive solution of x squared = 49?

7

200 What are the zeros of $(x \text{ minus } 4)(x + 1)$?

4 and negative 1

300 What is the minimum value of $y = (x \text{ minus } 2)$ squared + 3?

3

400 What is the discriminant of x squared + $4x + 1$?

12

500 Factor x squared + $7x + 12$. What is the larger constant in the factors?

4

Final Wager: Exponential Growth

Play this when the board is clear, or when two minutes are left. Announce the category, then every team writes a secret wager of up to the points it already has. Read the question. Teams get 60 seconds of silent writing, then hold their answers up together.

A colony of 500 bacteria doubles every hour. How many bacteria are there after 4 hours?

8000 bacteria

Right: add the wager. Wrong: subtract it. That is the final score.



Game, Day 1: The Board

Tape this to the whiteboard or copy it. Cross squares off as they are played.

Game • Day 1

EXPRESSIONS	FUNCTIONS	QUADRATICS	SEQUENCES	STATISTICS
100	100	100	100	100
200	200	200	200	200
300	300	300	300	300
400	400	400	400	400
500	500	500	500	500

Scores

Team 1

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Team 2

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Team 3

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Team 4

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Team 5

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Team 6

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Final Wager: Exponential Growth

Write your wager before you hear the question. A team may bet any amount up to the points it already has. Right answer: add the wager. Wrong answer: subtract it.

Team 1

WAGER

ANSWER

Team 2

WAGER

ANSWER

Team 3

WAGER

ANSWER

Team 4

WAGER

ANSWER

Team 5

WAGER

ANSWER

Team 6

WAGER

ANSWER



Answer Keys (1 of 6)

Teacher copy. Keep these pages out of the student sets.

Algebra 1 Set 1: Expressions, Properties and Order of Operations

Quick check: 1. Commutative Property of Multiplication; 2. Associative Property of Addition; 3. Distributive Property; 4. Additive Inverse Property

Use the order of operations: 1. 4; 2. 16; 3. -1; 4. 7

Simplify: 1. $3x^2 - 4x + 8$; 2. $14a - 15$; 3. $-y + 13$; 4. $5m + 10n$

Evaluate each expression: 1. 24; 2. 17; 3. 3; 4. -21

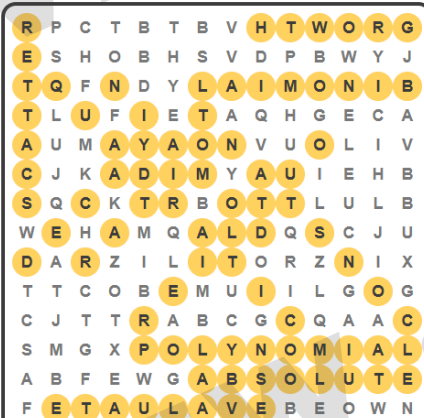
Write an algebraic expression: 1. $7n - 4$; 2. $2(n + 9)$; 3. $n/5 + 3$; 4. $n^2 - 8$

Word problems: 1. $6t - 45$; \$147; 2. $8x + 2$; 50 cm; 3. $12m + 3r$; \$99; 4. 77 degrees F and 14 degrees F; 5. $3n + 3$; 45; 6. $3.7p + 3.6$; \$18.40

Challenge: 1. 50; she added $2 + 3$ first, but multiplication comes before addition, so $3 \times 16 = 48$ and $2 + 48 = 50$; 2. $4x^2 - 9x + 22$; the value is 56; 3. $8 + 4 \times (6 - 2) = 8 + 16 = 24$; it is the only placement that works

Accept any equivalent expression in Block D and in the word problems, for example $2n + 18$ for $2(n + 9)$.

Calm block, Day 1: word search solution (algebra words)



All 12 words are marked. Words run in all eight directions, so a student who only searched across and down will be missing several.

Reset sheet: private, answers vary, nothing to grade. If a student hands it in anyway, thank them and leave it for the teacher.

Algebra 1 Set 2: Functions and Their Graphs

Quick check: 1. 10; 2. yes, a function; 3. $\{-1, 0, 5\}$; 4. $x = 6$

Evaluate the function: 1. 3; 2. 10; 3. 13; 4. 11

Function or not? Say why: 1. function (no x value repeats); 2. not a function ($x = 0$ has two outputs); 3. function (no x value repeats); 4. not a function ($x = 5$ has two outputs)

Give the domain D and range R: 1. $D = \{-2, 0, 3, 4\}$, $R = \{-6, 1, 5\}$; 2. $D = \{-5, -1, 6\}$, $R = \{2, 9\}$; 3. $D = \{-4, 1, 2, 7\}$, $R = \{-3, 0, 4, 8\}$; 4. $D = \{-1, 0, 1, 2\}$, $R = \{0, 1, 4\}$

Write the rule f(x) for each table: 1. $f(x) = 5x - 2$; 2. $f(x) = -2x + 11$; 3. $f(x) = (1/2)x + 1$; 4. $f(x) = -3x + 4$

Read the graph: 1. $d(2) = 8$: after 2 hours Sam is 8 miles from home; 2. domain $0 \leq t \leq 10$, range $0 \leq d \leq 12$; 3. $t = 2$ to 3 and $t = 5$ to 6; the graph is flat there; 4. -4 miles per hour; negative because he is riding back toward home; 5. $t = 1$ and $t = 8$; 6. 24 miles (12 out and 12 back)

Challenge: 1. $f(2) + g(-3) = 5 + 10 = 15$; $x = 5$; 2. $h(1) = 48$, $h(2) = 64$, $h(4) = 0$; the ball is back on the ground at 4 seconds, so the domain is $0 \leq t \leq 4$; 3. $C(h) = 55h + 40$; $C(6) = 370$ dollars



Algebra 1 Set 1: Practice

Sixteen problems in four blocks. Put the answer on the line and your work in the space beside it.

Algebra 1 • Day 1

A. Use the order of operations

1. $18 - 2 \times (3 + 4)$

2. $5^2 - 4 \times 3 + 6 \div 2$

3. $[20 - (2 + 3)^2] \div 5$

4. $48 \div 6 \times 2 - 3^2$

B. Evaluate each expression

1. $3x^2 - 5x + 2$, when $x = -2$

2. $(a + b)^2 - 2ab$, when $a = 4$
and $b = -1$

3. $(5m - 3)/(m + 1)$, when $m = 3$

4. $-x^2 + 4x$, when $x = -3$

C. Simplify

1. $5x^2 + 3x - 2x^2 + 8 - 7x$

2. $3(4a - 5) + 2a$

3. $-2(3y - 4) + 5(y + 1)$

4. $4(2m + n) - 3(m - 2n)$

D. Write an algebraic expression

1. The product of seven and a number n , decreased by four

2. Twice the sum of a number n and nine

3. The quotient of a number n and five, increased by three

4. Eight less than the square of a number n

Block C: leave the answer with the highest power first and no parentheses. Block D: use n for the number. Any equivalent expression is correct.

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Algebra 1 set 1, page 2 of 3

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checked

Thank you! If this works for your class, a quick review helps other teachers find it, and earns you TpT credits.

